whereas the exposed areas **53** have a square resistance above 10^{10} Ω/square. Both the conductive and non-conductive PANI are transparent to visible light. The in-situ doped conductive PANI is surrounded by areas **53** of non-conductive PANI, so that further planarization steps can be dispensed with.

The electroconductive areas **51** in the electrode layer **5** serve as electrodes for injecting holes into the active layer **7**, which is to be provided in a subsequent step and which is made from conjugated PPV with a repeating unit in accordance with FIG. **3** (poly[2-methoxy, 5-(3,7-dimethyloctyloxy)-p-phenylene vinylene]). The preparation of a similar PPV, namely MEH-PPV, is described in the international Patent Application WO 92/16023. The preparation of PPV in accordance with FIG. **3** is effected in the same manner as in the known method by using 4-methoxyphenol and 1-bromo-3,7-dimethyloctane as the starting materials. The active layer **7** having a thickness of 150 nm is manufactured by spin coating of an 1–3 wt. % solution of the conjugated 2,5-dialkoxy-substituted PPV. For the solvent, use can be made of toluene, xylene, THF or mixtures thereof. Calcium electrodes **9** are vacuum evaporated via a mask on the active layer **7** at a pressure below 2.10^{-4} Pa. The calcium electrodes **9** have a layer thickness of 250 nm and serve to inject electrons into the active layer **7**. The calcium electrodes **9** intersect the polymeric electrodes **51** at right angles. The overlapping rectangular areas of both types of electrodes form the nine LEDs or pixels of the display, one of said LEDs or pixels being referenced **11** in FIGS. **1** and **2**. In FIG. **1** only three electrodes of each type are shown. It is obvious that this number can be expanded to increase the number of pixels. The dimensions of the polymeric electroluminescent device **1** are 5×5 cm.

By way of example, one of the calcium electrodes **9** (the middle electrode of FIG. **1**) and one of the polymeric electrodes **51** (the leftmost electrode of FIG. **1**) are connected to a DC source, the calcium electrodes **9** being earthed. The active layer **7** of conjugated PPV emits, at the location of pixel **11**, homogeneous orange light which leaves the LED via the substrate **3** (indicated by arrows **13**). Said light has a brightness of 1000 Cd/m^2, so that it is also clearly visible under daylight conditions. In this manner, a light-emitting pixel **11** is formed. The other pixels emit light if the relevant intersecting electrodes are driven by the voltage source. The efficiency is 0.3%, i.e. three photons are generated per 1000 electrons injected into the active layer.

Exemplary embodiment 2.

A quantity of 0.35 mmol 3,4-ethylene dioxythiophene (EDOT, supplier bayer AG) is mixed with a solution of 0.81 mmol tris(toluene sulphonate)Fe(III) and 0.25 mmol imidazole in 1.5 g 1-butanol. The solution obtained is passed through a filter having a mesh size of 0.5 μm. The solution is stable at room temperature for at least 12 hours.

This solution is spin coated as a layer onto the substrate **3**. The layer obtained is dried at 50° C. for 3 minutes. In accordance with exemplary embodiment 1, the layer is exposed to patterned radiation with UV light (λ<300 nm) by means of an Hg lamp, so that the areas **51** remain unexposed. Subsequently, the layer is heated to 110° C. for 1 minute. After cooling of the layer, the Fe(II) salt formed is extracted from the layer by means of 1-butanol. After extraction, the average layer thickness of the electrode layer **5** is 140 nm. The unexposed areas **51** of the electrode layer **5** comprise electroconductive poly-3,4-ethylene dioxythiophene (PEDOT) having a square resistance of 240 Ω/square, from which the specific conductivity can be calculated to be 300 S/cm. The exposed parts **53** of the electrode layer **5** comprise a non-conductive polymer having a square resistance of $0.7 \cdot 10^9$ Ω/square. The electroconductive areas **51** in the electrode layer **5** serve as electrodes for injecting holes into the active layer **7** of poly[2-methoxy,5-(3,7-dimethyloctyloxy)-p-phenylene vinylene] (repeating unit in accordance with FIG. **3**).

Both the conductive and non-conductive PEDOT are transparent to visible light. Conductive areas **51** of PEDOT are surrounded by areas **53** of insulating PEDOT, so that further planarization steps can be dispensed with.

The further construction of the polymeric electroluminescent device as well as its properties are the same as in exemplary embodiment 1.

FIG. **4** shows the characteristic of the LED obtained, the current I in ampere being logarithmically plotted as a function of the applied voltage V in volts between the electrodes. Said Figure also shows the quantity of light L (electroluminescence) in arbitrary units (a.u.) as a function of the voltage V. The LED emits orange light in the range between 550 and 700 nm, with a maximum around 610 nm.

The method in accordance with the invention enables a polymeric LED having a large surface area to be manufactured in a simple manner by means of spin coating, the electrode layer being formed from conductive polymer. The electrode layer is structured into electrodes by patterned irradiation, thereby forming pixels for a display. When a flexible substrate surface is used, the LED in accordance with the invention can be easily bent, without causing damage to the electrodes.

We claim:

1. An electroluminescent device comprising an active layer made from a semiconducting conjugated polymer selected from the group consisting of poly (3-alkylthiophene) and poly (p-phenylene vinylene) polymers, which layer is situated between a first and a second electrode layer of which at least the first layer is transparent to the light to be emitted and comprises an electroconductive polymer which is suitable for injecting holes into the active layer, characterized in that the electroconductive polymer is poly-3,4-ethylenedioxythiophene.

2. The electroluminescent device of claim **1** wherein the conjugated polymer is soluble.

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